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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Mark D. Hamilton, et al.

Serial No: 09/756,995

Confirmation No.: 6889

Filed: 01/08/2001

For: Multi-Purpose Injection and Production
Well System

Examiner: Suchfield, George A.

Attorney Docket: 284BOT/US48

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#6 Reg. on
Reconsideration
E. J. H. W.
6/14/02

RESPONSE TO OFFICE ACTION

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Commissioner for Patents
Washington, D.C. 20231

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Sir:

In response to the Office Action dated 02/26/2002, having a shortened statutory response period set to expire on 05/26/2002, the Applicants offer the following remarks.

Claims 1 through 37 are pending in the subject patent application. Claims 1 through 29 have been allowed. Claims 30 and 34 have been rejected. Claims 31, 32, 33, 35, 36, and 37 have been objected to as being dependent on a rejected base claim. Reconsideration of the rejected claims is respectfully requested in view of the arguments below.

Claims 30 and 34 are rejected under 35 U.S.C. §102(b), or in the alternative, under 35 U.S.C. §103 as being anticipated by Hollingsworth. The Examiner contends that Hollingsworth discloses tubing 21 and pump housing 50 which constitute a completion string. Further, the Examiner contends that the sucker rod 55 and the crossover 54 comprise an injection fluid conduit, and that the plunger 53 comprises a production fluid conduit. Still further, the Examiner contends that the check valve 57 comprises an outlet port and that the standing valve 51 comprises an inlet port. Finally, the Examiner theorizes that operation of the Hollingsworth

apparatus will “necessarily or obviously” shift the crossover 54 into and out of communication with the outlet port 57 and “simultaneously place the production conduit 53 into and out of communication with the port 57 via the traveling valve 52”. The Applicants respectfully submit that claims 30 and 34 overcome Hollingsworth.

In fact, Hollingsworth clearly discloses that the tubing 21 and pump housing 50 are an example of a well known type of downhole pump assembly used entirely within the production zone of a well, with a reciprocating sucker rod 55 and a plunger 53, installed in a liner 17 for the purpose of pumping production fluid out of the liner.

First, as is disclosed at length in Hollingsworth, the pump apparatus shown there is for use in a production well 11, specifically to withdraw fluid from a production zone 16. The Examiner is respectfully reminded that the terms “production zone” and “injection zone” are very specific terms of art which have universally accepted meanings in the field of oil and gas well drilling and servicing. They are not broad terms which the Examiner can re-define for the purpose of supporting these rejections. Importantly, the universally accepted meanings of these terms are reinforced in the preambles of claims 30 and 34.

The entire interior of the liner 17, where the apparatus in Hollingsworth’s Figure 2 entirely resides, is, therefore, in the “production zone” of the well bore. There literally is no “injection zone” in the production well 11. Rather, the whole point of the Hollingsworth patent is that air or steam can be injected, not into the production well 11, but into one of the injection wells 12,13. See, for example, column 3, lines 13 through 18. Injection of diluting fluid or cooling fluid through the outlet port 57 is definitely not injection of fluid into an “injection zone” of the well bore 11, as the term “injection zone” is universally used in the art and recited in claims 30 and 34. Therefore, the Hollingsworth disclosure has nothing to do with the situation addressed by the present invention, where a single well bore has both a production zone and an injection zone, as recited in claims 30 and 34. That is, there is quite literally no way that Hollingsworth can be interpreted to disclose the alignment of its outlet port 57 with an injection zone as recited in claims 30 and 34. Instead, in Hollingsworth, the outlet port 57 is always aligned with the production zone of the well bore, within the liner 17. Also, there is quite literally no way that Hollingsworth can be interpreted to disclose the injection of fluid into the injection zone of the well bore, as recited in claims 30 and 34. Instead, in Hollingsworth, dilution or cooling fluid is injected into the production zone of the well bore, within the liner 17.

The Examiner is respectfully reminded that in order to support a rejection of a method claim, the cited reference must actually disclose or at least suggest the claimed method steps. In rejecting a method claim, it is not sufficient to cite an apparatus which could theoretically be used to perform a claimed method, where the reference does not even hint at the method being claimed. In Hollingsworth, there is no hint that the apparatus could be used in a well having an injection zone; in fact the Hollingsworth disclosure clearly teaches away from the well bore even having both production and injection zones.

Second, contrary to the Examiner's contention, there is never a time or a possible alignment of the apparatus of Hollingsworth when the port 57 stops communicating with the crossover 54 and begins communicating with the production conduit 53 via the traveling valve 52. That is, as the plunger 53 moves up and down, the outlet port 57 is always in communication with the annulus between the upper and lower sections of the plunger 53, in order to always be in communication with the crossover 54. See column 6, lines 14 through 22, where Hollingsworth points out that the crossover 54 and the outlet port 57 are for the purpose of injecting dilution fluid or cooling fluid into the interior of the liner 17. There is no hint anywhere in the disclosure of Hollingsworth that the plunger 53 should, or even could, be pulled entirely above the outlet port 57, as the Examiner suggests. Every word of the Hollingsworth disclosure which addresses the outlet port 57 has the outlet port in the annular space between the upper and lower sections of the plunger 53. It can easily be seen that if the plunger 53 were to be shifted above the outlet port 57, the dilution or cooling fluid could not flow from the crossover 54 through the outlet port 57, which is the entire disclosed function of the crossover 54 and the outlet port 57.

Further, even if the plunger 53 were to somehow rise above the outlet port 57, the subsequent dropping of the plunger 53 would not drive production fluid up through the traveling valve 52, which is the sole function of reciprocation of the plunger 53. Instead, production fluid pressure would simply be relieved via the outlet port 57, thereby preventing the traveling valve 52 from reliably unseating until the lower section of the plunger 53 passed below the outlet port 57. Clearly, therefore, in Hollingsworth, the outlet port 57 is always in communication with the crossover 54, and the outlet port 57 is never placed in communication with the production conduit 53, as the Examiner contends. This so because the plunger 53 never rises far enough to expose the outlet port 57 to the traveling valve 52.

Still further, if the plunger 53 did rise far enough to expose the outlet port 57 to the traveling valve 52, to place the outlet port 57 in communication with the production fluid flow path as the Examiner contends, this would be exactly contrary to what is recited in claims 30 and 34. That is, claims 30 and 34 clearly and specifically recite that the outlet port is placed in communication with the injection fluid flow path, while the inlet port is placed in communication with the production fluid flow path.

If, instead, the Examiner had intended to contend that the plunger 53 is shifted to place the production conduit 53 into and out of communication with the *standing valve 51* rather than with the *port 57*, this is also clearly untrue, since the standing valve 51 is always in communication with the production conduit 53 via the traveling valve 52. That is, the production conduit 53 is never out of communication with the standing valve 51, via the traveling valve 52. Movement of the plunger merely opens and shuts the traveling valve 52, as is well known in the art. Therefore, there can be no shifting to place the production fluid flow path into communication with the inlet port, as recited in the claims.

Since Hollingsworth fails to teach alignment of the outlet port of a completion string with an injection zone of the well or alignment of the inlet port of a completion string with a production zone of the well; or to teach shifting of the injection and production conduits to align with the outlet and inlet ports, respectively, as is required to substantiate a §102 rejection, these rejections of claims 30 and 34 are overcome. Further, since Hollingsworth functions in an entirely different way from the invention recited in claims 30 and 34, it fails to even hint at the method claimed in claims 30 and 34, and the §103 rejections of these claims are overcome. The Applicants respectfully submit, therefore, that claims 30 and 34 are allowable. Since claims 31, 32, 33, 35, 36, and 37 depend upon either claim 30 or claim 34, these claims are also allowable.

The Applicants respectfully submit that claims 30 through 37 are patentable, and that the application is now in a condition for allowance. An early Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at (253)853-1698 for any reason that would advance the instant application to issue.

Dated this 21st day of May, 2002.

Respectfully submitted,



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CERTIFICATE OF MAILING UNDER 37 CFR § 1.8

I hereby certify that this Response to Office Action is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on this 21st day of May, 2002.



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